

CLAIMS

1. A method for controlling a wastewater purification system for purifying wastewater by a batch activated sludge process, the wastewater purification system including a reaction tank containing an aeration device, a programmable sequencer for controlling the aeration means, a first sensor for detecting the dissolved oxygen concentration disposed in said reaction tank, a second sensor for detecting the oxidation-reduction potential disposed in said reaction tank, a third sensor for detecting the hydrogen ion concentration disposed in said reaction tank and a controller, the method comprising the steps of:
- controlling said aeration device by said programmable sequencer;
- acquiring, in said controller, respective data waveforms from said first sensor, said second sensor and said third sensor, and control status data of said programmable sequencer;
- analyzing, in said controller, said data waveform of dissolved oxygen concentration from said first sensor, said data waveform of oxidation-reduction potential from said second sensor, and said data waveform of hydrogen ion concentration from said third sensor, and
- performing in said controller, an alarm process when a deviation from a previously fixed normal state is discovered as a result of said analysis.
2. The method for controlling a wastewater purification system according to claim 1, wherein said controller discovers said deviation from the normal state by comparing said data waveform of dissolved oxygen concentration, said data waveform of oxidation-reduction potential and said data waveform of hydrogen ion concentration with previously prepared reference conditions.
3. The method for controlling a wastewater purification system according to claim 1, further

comprising a step of recording, in said controller, said data waveform of dissolved oxygen concentration, said data waveform of oxidation-reduction potential and said data waveform of hydrogen ion concentration.

5 4. The method for controlling a wastewater purification system according to claim 1, wherein said alarm process automatically transmits the occurrence of an abnormality to a remote site over a phone line.

10 5. The method for controlling a wastewater purification system according to claim 1, wherein the program of said programmable sequencer can be modified.

15 6. The method for controlling a wastewater purification system according to claim 1, wherein the program of said programmable sequencer can be modified from a remote site.

20 7. The method for controlling a wastewater purification system according to claim 1, wherein said wastewater purification system further includes a solid matter-removing device, a raw water tank, a raw water storage tank, a treated water-drawing device, and an extracting and dehydrating device for excess activated sludge.

25 8. The method for controlling a wastewater purification system according to claim 1, wherein said wastewater purification system further includes a device for separating the treated water from the activated sludge by using a microfiltration membrane, an ultrafiltration membrane or a reverse osmosis membrane, which is disposed in said reaction tank or separately therefrom.

30 9. The method for controlling a wastewater purification system according to claim 1, wherein said reaction tank has a circular or elliptical plan shape and a mortar-type cross-sectional shape and has an inclined part shielded from water by concrete or an asphalt sheet.

35 10. The method for controlling a wastewater purification system according to claim 1, wherein the BOD

volume load of said reaction tank is from 0.1 to 0.4
kg/m³·day.